

WOKINGHAM METEOROLOGICAL DATA

Wokingham Climatological Station, Emmbrook, Berkshire.

Lat/Long 51°25'N 00°51'W NGR (SU)798701 Altitude 46m ASL.

Monthly Means and Totals

OCTOBER 2016

Temperature (°C)	Anomaly	Rank in the past 135 years
Mean maximum	15.3	+0.1 39 th highest
Mean minimum	6.6	-0.6 61 st highest
Daily mean	10.9	-0.3 55 th highest
Highest maximum	19.2	on 4 th Lowest maximum 11.4 on 30 th
Highest minimum	10.2	on 29 th Lowest minimum 1.1 on 11 th
Mean grass minimum	1.7	-2.4 Lowest grass minimum -3.2 on 23 rd
Mean earth @30 cm	13.5	+0.4 Earth @100 cm 15.0
Frost duration (hrs)	0.0	Rain duration (hrs) 18.5
Rainfall total (mm)	27.7	39 % 21 st lowest
Highest daily fall	10.9	on 15 th
Number of: Dry days (<0.2mm)	19	Wet days (>0.9mm) 6 days ≥5mm 2
Sunshine total (hrs) 124.4	Daily mean 4.01	112 % Sunniest day 11.1 on 3 rd
N° days with: Air frost 0	Ground frost 9	Snow falling 0 Snow lying 0
Thunder 1	Hail ≥5mm 0	Small hail/ice 0 Fog @09 2 Nil sun 4
Pressure MSL: Mean @09 GMT, mbar 1022.1	+7.8	Highest 1036.2 on 29 th Lowest 1003.9 on 1 st
Relative humidity : Mean (%) 87.1	Lowest 40	on 3 rd Water vapour (g/kg), mean at 09 and 15 GMT 7.2, 7.0
Overall mean wind speed (mph) 4.4	Windiest day 9.2	on 18 th Max gust 31 on 5 th
Wind direction (days) N 6 NE 11 E 3 SE 1 S 2 SW 5 W 1 NW 2		
Least windy day (mph) 1.5	on 29 th	Calm; less than 0.5 mph (minutes) 1927

Anomaly = departure from 1981 to 2010 average (degrees C, percent and mbar).

Notes:

Dry and Sunny with Mean Temperature Below Average

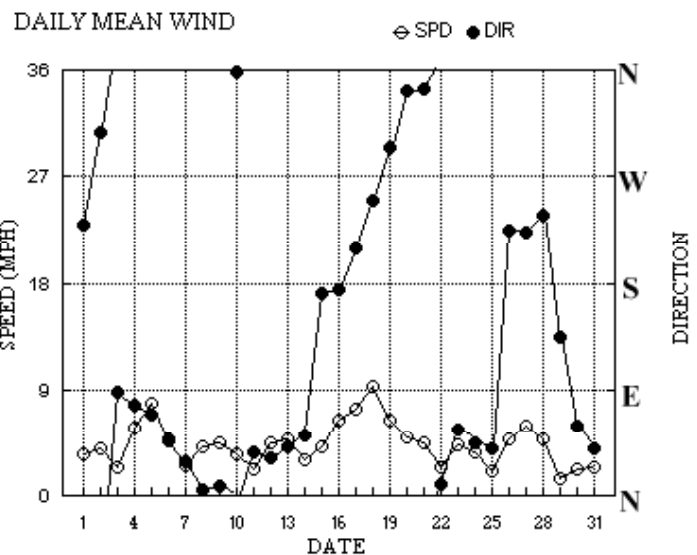
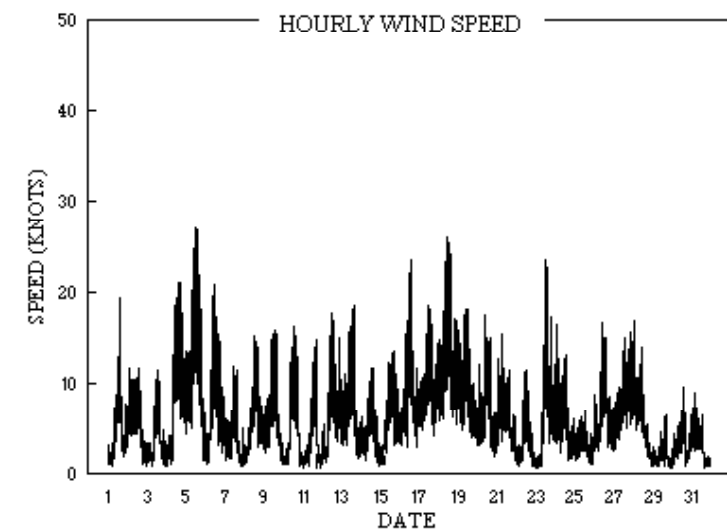
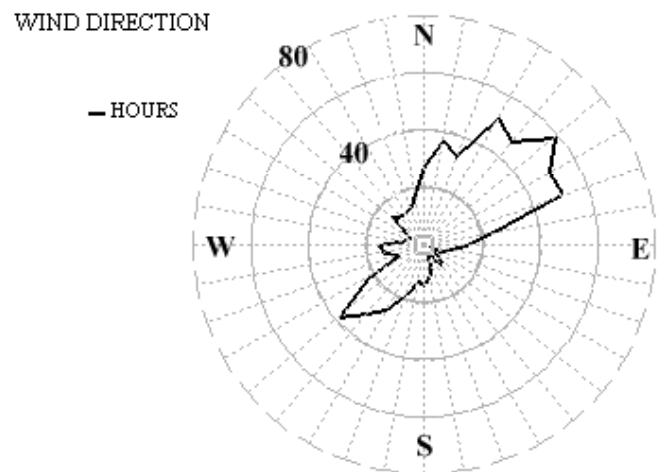
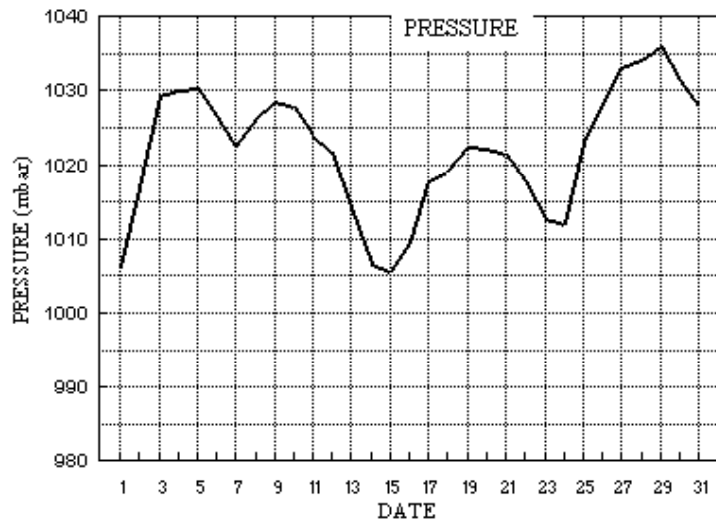
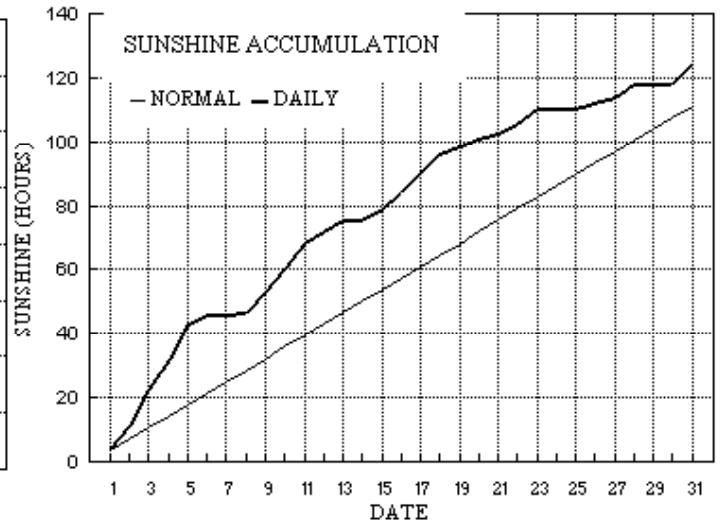
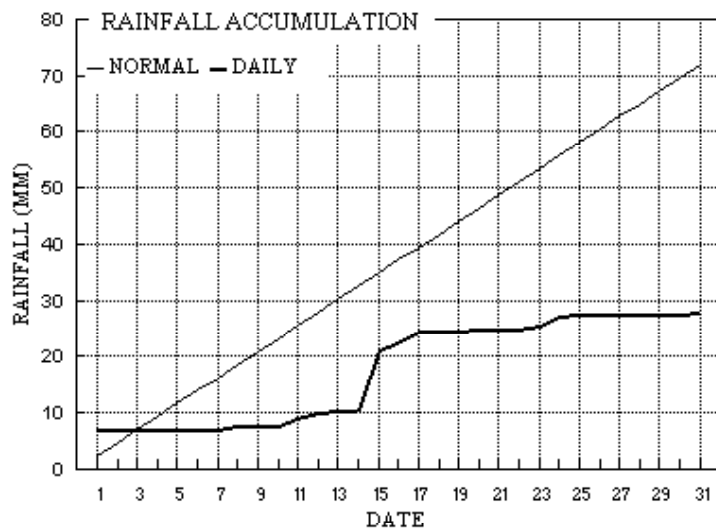
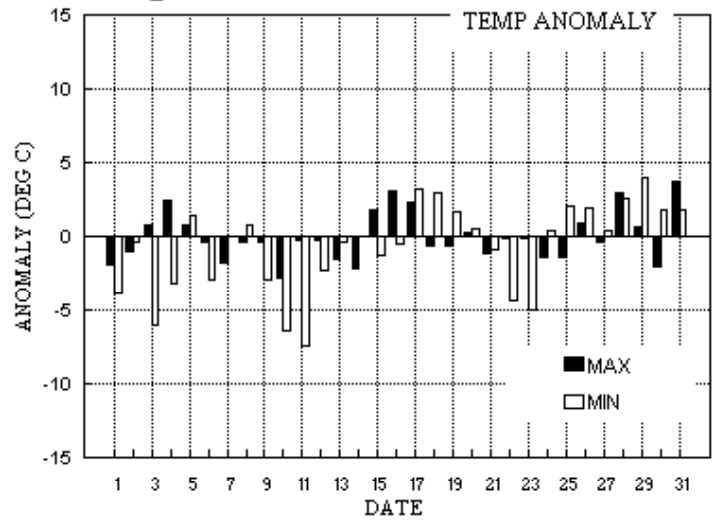
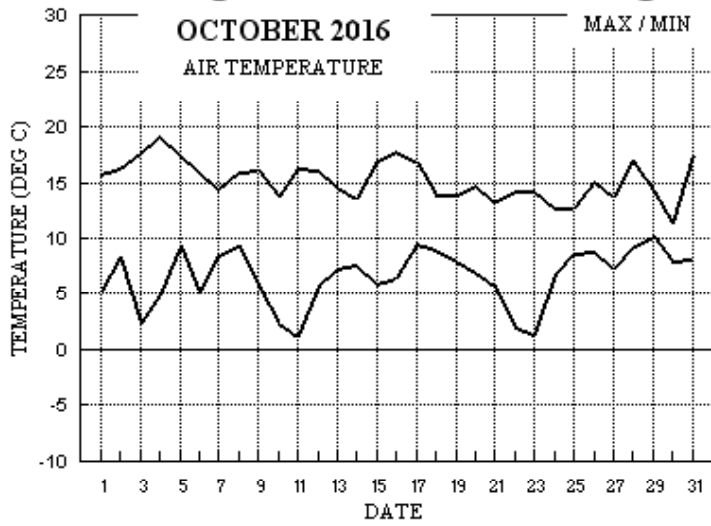
Temperature: This October is the coolest since 2012, and the mean is a little below the current climatological average. In this millennium only 3 Octobers have been colder than this year's. The mean minimum is lowest since 2008, although it is only 0.2° lower than in 2012. The highest max is 1.0° below the median while the lowest max is 2.0° above its median. The highest min is 2.9° below the median and is 4th lowest in 104 years, and lowest since 1974, while the lowest min is 2.1° above its median. There was no air frost this October, the last one was in 2012, but in the past 41 years 23 Octobers have had at least one. The mean grass min is lowest since 2003, but the lowest grass min is highest since 2013. The first ground frost of the season occurred on the 1st after 138 frost free days. Mean earth temperatures at 30 cm and 1 m depth are a little above average, but the highest 0900 GMT reading at 1 m, 16.8°, is equal highest with 1999 in the past 28 years. Anomalies for daily max varied by generally small amounts, never far from normal, ranging from -2.8° on the 10th and +3.8° on the 31st. Anomalies for daily min showed greater variation, with some large negative values but only small positive ones, and anomalies for individual nights exceeding -6° on the 3rd, 10th and 11th. **Rainfall:** This is the driest October since 1995, the total of 27.7 mm being just over one third of the average in what is normally the wettest month of the year. The 6.9 mm on the 1st was followed by a dry spell of 6 days, and only another 3.1 mm fell up to the 15th. Rainfall accumulation compared with normal was 23 mm in deficit on the 14th, this falling to 16 mm by the 17th, but plenty of dry days from then on saw the deficit reach 43 mm by the 31st. The number of dry days is 3 more than average. Rainfall duration at 18.5 hours is 36 % of average. Thunder was heard on the 1st, but there was no hail this month. The highest rainfall rate was 115 mm/hr during a brief violent rain shower on the 16th. **Sunshine:** This has been quite a sunny October overall, and best since 2011. The month got off to a good start, with a total of 41 hours by the 5th, 23 hours in surplus compared with normal. 3 dull days reduced this to 17 hours by the 8th, but a reasonably sunny mid-month increased this to 34 hours by the 18th, after which several dull days, especially 24th to the 30th, 3 of which had nil sun, reduced the surplus to 13 hours by the 31st. Days having more than 50 % of the maximum were the 2nd to 5th, 9th to 11th, 17th, 18th and 31st. Overall there were 13 days with <3 hours, 10 with =>6 hours and 3 with =>9 hours. **Wind:** This has been a low wind speed October, the mean of 4.4 mph being 1.8 mph below average and 2nd lowest after 2007 for any October since before 1988. The 9.2 mph on the month's windiest day is a new record low for the month. The month's highest gust is 13 mph below average, but is 2 mph above the record set in 2015. Speeds were light or moderate up to the 23rd then light or very light. Directions were SW'ly on the 1st, veering E'ly by the 3rd, backing N'ly by the 8th, veering NE'ly by the 14th, becoming S'ly on the 15th, veering NE'ly by the 23rd, becoming temporarily SW'ly from the 26th to 28th. **Pressure:** The mean is highest since 2007, and before that 1985.

Table 1. Mean anomalies (max, min, rain, sun) for specified periods.

From the 1 st to the 10 th				From the 11 th to the 20 th				From the 21 st to the 31 st			
-0.5°	-2.3°	34%	170%	+0.2°	-0.4°	73%	114%	+0.1°	+0.4°	13%	58%

B J Burton FRMetS. Hon. Met. Officer to Wokingham Town Council.

Wokingham Climatological Graphs for October 2016



Month: OCTOBER 2016

Date	Max C	Min C	Rain mm	Grass Min	30cm C	100cm C	Sun hrs	Frost hrs	pp09 mbar	Af Gf	Sf Sl	Th Ha	Ic Fg	Vec mean ddd ff sp	Max gust ddd gg HHhh	High hr ddd ff HH	Rain hrs			
1	15.7	5.2	6.9	-0.3	16.2	16.8	4.1	0.0	1006.0	0 1 0 0	1 0 0 0	228	1.5	3.1	264	20 1541	233	8	15	3.0
2	16.3	8.3	0.0	3.6	15.7	16.7	7.2	0.0	1016.8	0 0 0 0	0 0 0 0	306	2.8	3.5	260	12 0152	295	5	04	0.0
3	17.7	2.4	0.0	-2.3	15.3	16.6	11.1	0.0	1029.3	0 1 0 0	0 0 0 0	88	1.8	2.2	64	12 1236	75	5	12	0.0
4	19.2	4.9	0.0	0.2	14.8	16.5	9.7	0.0	1030.2	0 0 0 0	0 0 0 0	77	4.7	5.1	64	21 1623	68	9	15	0.0
5	17.4	9.4	0.0	3.2	14.7	16.3	11.0	0.0	1030.3	0 0 0 0	0 0 0 0	69	6.7	6.8	45	27 1155	74	11	12	0.0
6	15.9	5.1	0.1	-1.8	14.4	16.1	3.1	0.0	1026.6	0 1 0 0	0 0 0 0	49	3.8	4.0	63	21 1000	65	9	12	0.3
7	14.5	8.4	0.1	1.6	14.4	16.0	0.0	0.0	1022.5	0 0 0 0	0 0 0 0	30	2.0	2.2	25	12 1101	38	5	11	0.2
8	15.9	9.3	0.7	4.2	14.4	15.9	0.7	0.0	1026.3	0 0 0 0	0 0 0 0	6	3.6	3.6	21	15 1207	15	7	14	0.6
9	16.1	5.8	tr	-1.0	14.6	15.7	6.1	0.0	1028.7	0 1 0 0	0 0 0 0	9	3.8	3.9	30	16 1406	18	7	10	0.0
10	13.8	2.3	tr	-3.0	14.1	15.7	7.5	0.0	1027.8	0 1 0 0	0 0 0 0	357	2.4	3.1	16	16 1216	7	7	12	0.0
11	16.3	1.1	1.3	-3.0	13.5	15.5	8.3	0.0	1024.1	0 1 0 0	0 0 0 0	38	1.5	2.0	27	15 1616	33	5	14	0.8
12	16.2	5.7	0.8	0.7	13.3	15.4	3.0	0.0	1021.6	0 0 0 0	0 0 0 0	32	3.9	4.0	22	18 1201	29	8	14	1.5
13	14.6	7.3	0.3	4.4	13.4	15.2	3.6	0.0	1014.3	0 0 0 0	0 0 0 0	42	4.2	4.2	65	19 1507	52	7	13	1.2
14	13.5	7.6	tr	4.1	13.6	15.1	0.1	0.0	1006.7	0 0 0 0	0 0 0 0	52	2.6	2.7	67	12 1249	69	5	13	0.1
15	17.0	6.0	10.9	0.8	13.6	15.0	3.7	0.0	1005.7	0 0 0 0	0 0 0 0	171	3.2	3.7	144	14 1601	162	7	15	3.6
16	17.8	6.4	1.4	0.3	13.4	14.9	5.0	0.0	1009.4	0 0 0 0	0 0 0 0	175	4.3	5.6	201	24 1343	201	11	13	0.5
17	16.8	9.5	2.1	3.9	13.4	14.8	6.1	0.0	1017.9	0 0 0 0	0 0 0 0	210	6.0	6.4	236	19 1124	230	10	11	1.0
18	14.0	9.0	0.0	4.5	13.3	14.8	6.0	0.0	1019.1	0 0 0 0	0 0 0 0	249	7.6	8.0	277	26 1034	260	11	13	0.0
19	14.0	8.0	0.0	3.0	13.0	14.7	2.5	0.0	1022.4	0 0 0 0	0 0 0 0	294	5.1	5.6	301	18 1135	311	8	11	0.0
20	14.8	7.0	0.2	1.3	12.9	14.6	2.3	0.0	1022.2	0 0 0 0	0 0 0 0	342	3.9	4.4	22	18 1035	13	8	10	0.2
21	13.2	5.8	0.0	-1.1	12.7	14.5	1.5	0.0	1021.5	0 1 0 0	0 0 0 0	344	3.8	3.9	354	16 0519	359	5	02	0.0
22	14.3	2.1	0.0	-3.0	12.5	14.4	2.9	0.0	1017.8	0 1 0 0	0 0 0 0	11	1.1	2.1	20	12 1207	17	5	11	0.0
23	14.3	1.4	0.7	-3.2	12.1	14.3	4.6	0.0	1012.7	0 1 0 0	0 0 0 0	57	3.3	3.7	59	24 1304	62	9	12	0.8
24	12.8	6.7	1.8	5.4	12.0	14.1	0.0	0.0	1012.0	0 0 0 0	0 0 0 0	45	3.2	3.3	29	17 0302	41	6	03	3.1
25	12.8	8.6	0.1	6.6	12.3	14.0	0.4	0.0	1022.9	0 0 0 0	0 0 0 0	40	1.6	1.9	77	7 1257	60	3	12	0.2
26	15.1	8.9	tr	3.9	12.5	13.9	1.5	0.0	1028.4	0 0 0 0	0 0 0 0	224	4.1	4.2	246	17 1043	236	7	10	0.5
27	13.8	7.3	0.0	0.5	12.6	13.8	2.0	0.0	1033.1	0 0 0 0	0 0 0 0	222	5.1	5.2	228	16 2049	224	8	15	0.0
28	16.9	9.1	tr	5.9	12.7	13.8	4.1	0.0	1034.2	0 0 0 0	0 0 0 0	236	3.8	4.2	255	17 0121	244	7	02	0.1
29	14.2	10.2	0.2	6.0	12.9	13.8	0.0	0.0	1036.1	0 0 0 0	0 0 0 0	134	0.8	1.3	124	7 1712	150	4	17	0.6
30	11.4	8.0	tr	4.3	12.9	13.8	0.0	0.0	1031.5	0 0 0 0	0 0 0 1	59	1.8	2.0	64	10 1552	64	4	15	0.0
31	17.4	8.1	0.1	4.5	12.8	13.8	6.3	0.0	1027.8	0 0 0 0	0 0 0 1	40	1.7	2.1	47	9 0404	14	3	13	0.2
Total			27.7				124.4	0.0												18.5
Mean	15.3	6.6		1.7	13.5	15.0	4.01	0.0	1022.1					16	0.7	3.8				
Anom	+0.1	-0.6	39%	-2.4	+0.4	+0.3	112%				+7.8									
Daily mean		10.9																		
Anom		-0.3																		

Number of days with:

Air frost = 0 Ground frost = 9 Nil sun = 4
 Snow falling = 0 Snow lying = 0 Thunder = 1
 Hail=>5mm = 0 Hail<5mm or ice = 0 Fog at 09GMT = 2

Abbreviations.

Max/min = highest and lowest air temperature at 1.2m in 24 hour period ending at 09 GMT

Rain = total rainfall and melted snowfall in 24 hour period ending at 09 GMT, millimetres. (Tr = trace, <.05mm).

Grass min = Lowest overnight temperature at grass tip level.

Sun = hours of bright sunshine, measured electronically. Frost = Number of hours with air temp below 0 deg C.

pp09 = Air pressure corrected to mean sea level at 0900 GMT, millibars.

Af = Air frost. Gf = Ground frost. Sf = Snow falling. Sl = Snow lying at 09 GMT.

Th = Thunder. Ha = Hail =>5mm. Ic = Hail <5mm or ice. Fg = Fog at 09 GMT.

Vec mean = 24 hour mean wind vector, ddd = direction in degrees from true north, ff = speed in knots.

Sp = 24 hour mean wind speed in knots.

Max gust = Highest gust in 24 hours, gg = speed in knots, HHhh = Time, hours and minutes, GMT.

High hr = Highest hourly mean wind, HH = hour commencing. Rain Hrs = Duration of rain, 24 hours to 09 GMT. Excludes snow/hail.

30cm and 100 cm are earth temperatures at those depths, read at 09 GMT.

Anom = Departure from 1981-2010 climatological average.

All temperatures in degrees Celsius.

Weather observations. Emmbrook, Wokingham, Berkshire.

Observations at 0900 GMT for OCTOBER 2016

Date	VV	N	dd	ff	gg	TT	TdTd	RH	r	PPP	a	ppp	ww	W1	W2	Nh	Cl	h	Cr	Ch	NChshs	NChshs	NChshs	Date	Remarks
1	30	8	22	05	07	10.6	10.3	98	7.7	1006.0	5	003	62	8	6	7	8	2	2	81705	83825	86645	1	8Ns56 Cu med	
2	61	7	29	04	11	10.3	8.2	87	6.7	1016.8	2	024	01	2	2	7	6	4	87710				2		
3	65	6	02	03	05	10.1	9.0	93	7.1	1029.3	1	012	02	1	1	0	0	9	0	81075	86080		3	COTRA	
4	60	6	09	06	13	14.2	12.4	89	8.9	1030.2	1	004	05	4	1	1	6	3	0	81708	86080		4	1Ci75 COTRA	
5	78	1	08	09	20	13.8	7.6	66	6.3	1030.3	2	012	03	0	0	1	1	5	0	81820			5	1Ci75 Cu hum	
6	84	7	04	05	13	11.3	6.3	71	5.8	1026.6	7	007	02	2	2	7	5	6	83638	87645		6			
7	60	8	02	03	06	11.4	10.5	94	7.8	1022.5	0	003	20	5	2	8	8	4	81812	85622	88630	7	Cu hum/fra		
8	62	7	36	05	08	12.9	11.1	89	8.1	1026.3	2	013	80	8	2	6	5	4	82711	86615	87357	8			
9	84	1	02	07	15	11.1	7.5	79	6.3	1028.7	2	002	03	0	0	1	8	4	81812			9	1Sc50 1Ci80 Cu fra		
10	62	2	01	03	07	8.8	6.9	88	6.2	1027.8	7	004	03	0	0	1	6	3	0	81706			10	1Ci72 2Cc75 COTRA Parhelia	
11	62	1	02	02	05	8.2	6.8	91	6.0	1024.1	2	002	40	0	0	1	5	6	81635			11	1Ci75 jf NW vv30km exNW		
12	70	7	02	03	09	10.7	10.4	98	7.8	1021.6	0	002	25	8	2	7	8	4	81815	83825	85650	12	/Ac58 Cu fra/med		
13	61	6	04	05	14	9.9	8.2	89	6.8	1014.3	8	007	03	8	2	5	6	4	83710	83650	85357	13			
14	60	7	03	03	06	10.5	8.9	89	7.1	1006.7	0	000	05	6	2	5	5	5	81620	84656	87358	14	2Sc40 /Ci80 COTRA		
15	50	8	18	04	08	11.4	9.8	90	7.6	1005.7	2	010	21	6	2	8	5	5	86620	88645		15			
16	65	7	19	05	10	13.1	12.7	97	9.2	1009.4	5	002	21	6	2	6	8	3	81707	83812		16	3Sc20 4Ns50 /Ac62 /Ci72. Cu med jpN&W		
17	80	4	20	06	11	13.5	10.6	83	7.9	1017.9	1	016	01	8	1	1	5	4	81710	84075		17	1Sc50 1Ac69 1Ci70 COTRA Cb top S		
18	84	7	25	09	19	11.4	9.4	88	7.3	1019.1	3	008	21	6	2	4	8	4	81712	84635	87357	18	1Cu18 Cu hum		
19	86	7	28	08	18	11.1	7.0	76	6.2	1022.4	1	006	02	2	2	7	8	4	81818	87650		19	/Ac62 Cu hum		
20	61	7	35	04	09	11.1	8.9	86	7.0	1022.2	2	008	02	2	2	7	6	4	87710			20	/Sc50		
21	61	7	01	05	12	8.5	7.0	90	6.1	1021.5	2	005	02	2	2	7	6	3	87708			21			
22	57	8	35	02	05	7.7	7.1	96	6.2	1017.8	4	000	10	4	1	8	6	2	83703	88705		22			
23	30	3	07	03	07	6.7	6.7	100	6.0	1012.7	4	000	28	4	1	3	5	2	81705	83625		23	Fog until 0830		
24	56	8	03	04	10	9.8	8.5	92	6.9	1012.0	0	012	05	2	2	8	5	6	85645	88650		24			
25	20	8	03	03	05	9.3	9.0	98	7.1	1022.9	2	021	51	6	5	8	5	2	81705	85615	88630	25			
26	57	7	24	04	11	11.7	11.5	99	8.3	1028.4	3	011	10	4	2	7	6	2	83705	87708		26			
27	10	8	23	04	08	9.1	9.0	99	7.0	1033.1	1	011	28	4	2	8	6	0	88701			27			
28	64	5	22	05	12	13.6	10.6	82	7.7	1034.2	2	012	02	2	2	1	0	9	81360	84078		28	1Ac68 2Ci72 COTRA Parhelia		
29	20	8	07	01	03	12.8	12.2	96	8.6	1036.1	1	009	50	5	2	8	5	3	85708	88612		29			
30	05	9	07	04	05	10.3	10.3	100	7.7	1031.5	0	007	43	4	4	9	9	9				30			
31	08	7	04	02	06	10.9	10.9	100	8.0	1027.8	1	003	42	4	4	7	6	1	87702			31	/Ci75 COTRA		

Mean vis = 15.5 km

Mean cloud = 6.2 77%

Mean wind speed = 4.4 kn

Mean gust = 10 kn

Mean TT = 10.8 °C

Mean TdTd = 9.2 °C

Mean RH = 90.1 %

Mean r = 7.2 g/kg

Mean PPP = 1022.1 mbar

See appendix 2 below for full code details

VV = Visibility code (Code FM12-4377)

N = Total cloud amount, oktas

dd = Direction from which wind is blowing, tens of degrees true

ff = 10 minute mean wind speed, knots

gg = Highest gust in past hour, knots

TT = Air temperature at 1.2 m, deg Celsius

TdTd = Dew point temperature at 1.2 m, deg Celsius

RH = Relative humidity at 1.2 m

r = Humidity mixing ratio at 1.2 m, g/kg

PPP = Air pressure reduced to sea level, mbar

a = Characteristic of pressure tendency (Code FM12-0200)

ppp = 3 hr pressure tendency, tenths of mbar

ww = Present weather code (Code FM12-4677)

W1, W2 = Past weather code (Code FM12-4561)- covers past 3 hours.

Nh = Amount of low cloud present, oktas

Cl = Type of low cloud (Code Fm12-0513)

h = Height of low cloud (Code FM12-1600)

Cm = Type of medium cloud (Code FM12-0515)

Ch = Type of high cloud (Code FM12-0509)

8 groups. 8 = indicator for cloud detail

N = Amount of cloud, oktas

C = Type of cloud (FM12-0500)

hshs= Height of cloud (FM12-1677)

Remarks : COTRA = persistent condensation trails present.

Weather observations. Emmbrook, Wokingham, Berkshire.

Observations at 1500 GMT for OCTOBER 2016

Date	VV	N	dd	ff	gg	TT	TdTd	RH	r	PPP	a	ppp	ww	W1	W2	Nh	Cl	h	Cr	Cf	NChshs	NChshs	NChshs	Date	Remarks
1	60	5	21	06	17	15.6	8.3	62	7.2	1004.1	7	010	25	9	6	4	9	5	6	3	83925	81830	1	1Sc45 1Ac60 1Ci70 jp W-NW, SE	
2	84	2	32	05	12	16.2	7.8	57	6.3	1018.7	2	009	02	0	0	2	8	6	0	0	82835		2	1Sc45 Cu med	
3	82	2	11	03	09	17.4	5.7	46	5.6	1029.0	7	002	02	0	0	1	1	6	0	1	81845		3	2Ci80 COTRA Cu hum	
4	64	5	07	09	18	17.9	10.5	62	7.8	1028.7	6	010	02	1	1	1	1	6	0	1	81835	84080	4	COTRA Cu hum Parhelia CZ arc	
5	82	1	08	12	25	15.9	6.9	55	6.2	1028.1	7	010	02	0	0	1	1	6	0	0	81840		5	Cu hum	
6	84	6	06	07	18	15.3	5.9	54	5.5	1022.8	7	024	02	2	2	6	8	6	0	0	82840	85656	6	Cu med	
7	70	8	06	04	12	13.9	10.2	78	7.6	1021.9	6	002	02	2	2	8	8	5	/	/	81822	84635 88650	7	Cu hum	
8	75	7	02	09	15	14.4	10.2	75	7.4	1026.6	3	001	15	8	2	4	8	4	7	/	82817	83635 87358	8	Cu med jpW vv50k exW	
9	65	7	04	06	16	13.7	7.7	67	6.3	1027.6	5	008	25	8	2	4	8	6	6	0	83830	86358	9	2Sc50 Cu con jp all quads vv60k ex p Rainbow	
10	82	5	36	04	15	12.8	4.6	57	5.0	1024.8	7	015	15	1	1	5	8	6	3	1	81840	85650	10	1Ac68 1Ci75 Cu con jpE vv70k ex p	
11	86	2	03	05	14	13.9	7.5	65	6.5	1021.3	7	019	02	1	1	2	8	6	0	1	81832		11	1Sc50 1Ci75 Cu med	
12	80	7	03	07	17	13.9	8.5	70	7.0	1018.8	7	015	15	8	2	7	8	5	/	/	83825	85656	12	Cu med jpS	
13	80	7	05	08	18	12.5	7.5	71	6.5	1010.4	7	019	02	2	2	7	8	5	/	/	82825	86656	13	Cu med	
14	65	7	05	04	10	13.1	8.1	72	7.0	1004.7	7	012	02	2	2	2	8	5	7	/	82825	87357	14	1Sc35 Cu med	
15	82	7	16	07	13	15.6	7.4	58	6.4	1006.5	7	002	15	1	1	2	8	6	7	/	82835	84465 86368	15	1Sc50 1Ac62 Cu med jpS vv60k exS	
16	80	2	21	07	20	14.8	12.2	85	8.8	1012.2	2	011	25	8	1	1	9	5	6	3	81918	81822	16	1Sc50 1Ac58 1Ci66 jp NE&S	
17	65	5	23	07	18	15.6	9.6	67	7.3	1018.4	3	001	16	1	1	4	8	6	6	0	83830		17	2Sc50 2Ac62 Cu con jpW&NW vis 40k ex p	
18	86	2	26	10	24	13.2	2.8	49	4.5	1020.0	6	001	02	0	0	1	1	6	0	1	81840		18	2Ci80 COTRA Cu hum	
19	84	7	30	05	14	12.9	6.9	67	6.0	1021.2	7	004	02	2	2	7	8	6	/	/	81830	87650	19	Cu med	
20	60	7	01	05	12	12.5	7.8	73	6.4	1021.3	5	001	80	8	2	7	8	5	/	/	82825	83640 87650	20	Cu med	
21	80	7	35	04	10	11.9	7.5	74	6.4	1019.4	6	012	15	2	2	5	8	5	3	1	81825	85645 86075	21	2Ac65 Cu med jpE	
22	82	7	02	03	07	11.7	7.9	77	6.6	1015.3	7	015	02	2	2	7	8	5	/	1	81825	83645 87656	22	/Ci75 Cu med	
23	80	7	07	09	23	11.5	6.3	70	5.9	1010.2	6	008	03	1	1	2	8	6	0	4	81830	86073	23	2Sc40 Cu hum	
24	62	7	05	04	10	12.3	8.6	78	7.0	1013.1	2	003	02	2	2	2	8	5	7	8	81825	84465 87270	24	2Sc56 1Ac62 Cu hum	
25	40	5	04	02	05	12.6	11.5	93	8.2	1023.6	4	000	05	5	2	5	5	3	0	0	82708	85656	25		
26	80	7	24	07	15	14.9	11.0	77	8.0	1028.7	5	003	03	2	2	7	8	5	/	/	82820	86645	26	Cu med	
27	81	7	24	09	15	13.6	10.7	82	7.9	1031.8	5	010	01	2	2	5	8	5	4	2	82820	85628 87070	27	1Ac65 COTRA Cu med	
28	72	8	26	04	08	15.4	11.5	78	8.3	1034.6	2	001	02	2	2	8	5	4	/	/	88618		28		
29	59	8	13	01	02	13.9	12.6	92	8.9	1033.6	6	016	20	5	2	8	5	4	/	/	86615	88620	29		
30	32	8	07	03	07	11.3	10.9	97	8.0	1029.6	7	010	10	2	2	8	6	2	/	/	87704	88705	30		
31	56	6	36	03	05	17.0	12.5	75	9.0	1025.7	7	014	05	2	2	0	0	9	0	1	86080		31	COTRA	

Mean vis = 27.9 km

Mean cloud = 5.7 72%

Mean wind speed = 5.8 kn

Mean gust = 14 kn

Mean TT = 14.1 °C

Mean TdTd = 8.6 °C

Mean RH = 70.4 %

Mean r = 7.0 g/kg

Mean PPP = 1021.1 mbar

See appendix 2 below for full code details

VV = Visibility code (Code FM12-4377)

N = Total cloud amount, oktas

dd = Direction from which wind is blowing, tens of degrees true

ff = 10 minute mean wind speed, knots

gg = Highest gust in past hour, knots

TT = Air temperature at 1.2 m, deg Celsius

TdTd = Dew point temperature at 1.2 m, deg Celsius

RH = Relative humidity at 1.2 m

r = Humidity mixing ratio at 1.2 m, g/kg

PPP = Air pressure reduced to sea level, mbar

a = Characteristic of pressure tendency (Code FM12-0200)

ppp = 3 hr pressure tendency, tenths of mbar

ww = Present weather code (Code FM12-4677)

W1, W2 = Past weather code (Code FM12-4561)- covers past 3 hours.

Nh = Amount of low cloud present, oktas

Cl = Type of low cloud (Code FM12-0513)

h = Height of low cloud (Code FM12-1600)

Cm = Type of medium cloud (Code FM12-0515)

Ch = Type of high cloud (Code FM12-0509)

8 groups. 8 = indicator for cloud detail

N = Amount of cloud, oktas

C = Type of cloud (FM12-0500)

hshs= Height of cloud (FM12-1677)

Remarks : COTRA = persistent condensation trails present.

Wokingham	Hour	01-Oct	02-Oct	03-Oct	04-Oct	05-Oct	06-Oct	07-Oct	08-Oct	09-Oct	10-Oct	11-Oct	12-Oct	13-Oct	14-Oct	15-Oct	16-Oct
Sunshine	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hourly analysis	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2016	4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	6	0.49	0.00	0.57	0.02	0.59	0.00	0.00	0.00	0.34	0.27	0.26	0.00	0.00	0.00	0.00	0.00
	7	0.59	0.00	1.00	0.78	1.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00	0.03	0.00
	8	0.00	0.08	1.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00	0.45	0.01	0.38	0.00
	9	0.00	0.94	1.00	0.99	1.00	0.11	0.00	0.00	0.99	0.98	1.00	0.53	0.81	0.03	0.00	0.00
	10	0.02	1.00	1.00	0.87	1.00	0.08	0.00	0.00	0.84	1.00	1.00	0.48	0.62	0.00	0.51	0.60
	11	0.28	0.87	1.00	0.93	1.00	0.49	0.00	0.00	0.35	0.97	0.71	0.68	0.58	0.00	0.69	0.57
	12	0.84	0.75	1.00	1.00	1.00	0.30	0.00	0.18	0.43	0.67	0.96	0.05	0.49	0.00	0.85	0.96
	13	0.47	0.39	1.00	1.00	0.98	0.40	0.00	0.08	0.74	0.29	0.68	0.63	0.11	0.00	0.78	0.86
	14	0.93	0.98	1.00	1.00	1.00	0.58	0.00	0.45	0.17	0.49	0.93	0.56	0.06	0.00	0.47	0.55
	15	0.43	0.89	1.00	1.00	1.00	0.33	0.00	0.00	0.23	0.19	0.61	0.00	0.49	0.02	0.00	0.94
	16	0.00	0.83	1.00	1.00	1.00	0.64	0.00	0.00	0.00	0.48	0.17	0.00	0.00	0.01	0.00	0.52
	17	0.00	0.47	0.49	0.12	0.40	0.12	0.00	0.00	0.00	0.16	0.00	0.00	0.00	0.00	0.00	0.00
	18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tot		4.06	7.21	11.06	9.70	10.98	3.05	0.00	0.72	6.10	7.51	8.32	2.96	3.62	0.07	3.72	4.99

Hour	17-Oct	18-Oct	19-Oct	20-Oct	21-Oct	22-Oct	23-Oct	24-Oct	25-Oct	26-Oct	27-Oct	28-Oct	29-Oct	30-Oct	31-Oct	Mean
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08
7	0.41	0.00	0.00	0.00	0.00	0.76	0.00	0.00	0.00	0.00	0.00	0.56	0.00	0.00	0.00	0.26
8	0.82	0.00	0.00	0.00	0.00	0.80	0.61	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.33
9	1.00	0.54	0.81	0.33	0.04	0.00	0.86	0.00	0.00	0.06	0.00	1.00	0.00	0.00	0.01	0.42
10	0.57	0.81	0.99	0.58	0.42	0.09	0.84	0.00	0.00	0.00	0.06	0.92	0.00	0.00	0.89	0.49
11	0.74	0.55	0.41	0.68	0.22	0.48	0.86	0.00	0.00	0.01	1.00	0.58	0.00	0.00	1.00	0.51
12	0.65	0.64	0.09	0.57	0.53	0.72	0.80	0.00	0.00	0.36	0.91	0.00	0.00	0.00	1.00	0.51
13	0.84	0.74	0.04	0.17	0.25	0.00	0.49	0.00	0.00	0.30	0.05	0.00	0.00	0.00	1.00	0.40
14	0.71	0.83	0.14	0.00	0.00	0.01	0.13	0.00	0.00	0.52	0.00	0.00	0.00	0.00	1.00	0.40
15	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.03	0.00	0.00	0.00	0.00	1.00	0.30
16	0.35	0.89	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.21	0.00	0.00	0.00	0.00	0.35	0.25
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tot	6.09	6.01	2.48	2.33	1.47	2.87	4.60	0.00	0.43	1.51	2.02	4.05	0.00	0.00	6.25	124.10

OCTOBER 2016	T mn	Tx	Time	Tn	Time	RHmn	RH x	Time	RH n	Time	Tdmn	r mn	r x	Time	r n	Time	p mn	p x	Time	p n	Time	
1	9.73	15.87	1500	5.127	412	89.6	96.5	725	58.42	1506	7.98	6.722	8.87	1145	5.237	412	1006.37	1010.2	2357	1003.9	1519	
2	10.49	16.4	1258	4.701	2356	82.4	95.6	2326	47.24	1517	7.37	6.358	8.04	1201	4.977	2357	1017.55	1025.0	2358	1010.1	10	
3	8.98	17.74	1358	2.251	552	81.5	96.3	734	40.35	1526	5.457	5.553	8.09	956	4.208	552	1028.65	1030.3	2129	1024.9	0	
4	11.9	19.43	1341	4.773	241	82.1	96.5	712	47.41	1407	8.67	6.939	9.21	1009	4.975	241	1029.57	1030.4	943	1028.2	1343	
5	11.88	17.51	1226	5.919	2359	73.9	93	33	46.08	1215	7.05	6.157	7.37	100	5.168	1649	1029.02	1030.5	937	1027.6	1616	
6	9.56	10.34	1929	8.31	2045	80.7	85.5	2127	75.8	1933	-1	5.908	6.373	2339	5.621	2045	1023.00	1023.4	2053	1021.7	1918	
7	11.85	14.59	1446	9.18	2205	89.4	98	2222	75.1	1434	10.12	7.6	8.39	1256	6.943	2205	1022.92	1024.4	2337	1020.7	1157	
8	12.26	16.1	1416	10.17	57	89	98	222	70	1451	10.47	7.76	9.4	1327	6.894	2331	1026.42	1028.6	2355	1024.1	29	
9	10.19	16.25	1404	5.685	612	83.6	98.3	655	54.39	1406	7.36	6.28	7.51	1215	5.413	610	1028.35	1029.1	2053	1027.2	1404	
10	7.5	14.12	1400	2.154	630	84	99.7	717	50.62	1401	4.611	5.212	6.476	1029	4.312	630	1026.46	1028.8	12	1024.3	1607	
11	7.57	16.48	1309	1.032	529	87.6	99.7	715	52.8	1315	5.366	5.571	7.58	1116	3.995	529	1022.98	1024.9	3	1020.8	1529	
12	10.65	16.3	1147	6.991	613	88.7	99.5	708	59.66	1435	8.75	6.963	8.89	1147	6.08	613	1020.12	1022.1	41	1017.3	2358	
13	9.99	14.78	1256	7.19	534	86.1	98.8	339	61.35	1241	7.68	6.512	7.55	1139	5.742	1523	1012.61	1017.5	1	1008.4	2358	
14	10.35	13.63	1308	7.25	2359	87.8	98.5	622	66.94	1401	8.34	6.851	7.6	1108	6.212	2359	1006.00	1008.6	0	1004.3	2351	
15	10.64	17.13	1402	5.94	246	87.8	99.2	631	49.81	1319	8.43	6.918	8.43	1128	5.731	246	1006.73	1011.7	2358	1004.1	216	
16	12.02	17.93	1232	6.34	307	89.2	99.8	335	58.36	1317	10.17	7.75	10.11	1042	5.857	306	1011.79	1015.2	2359	1008.5	712	
17	11.78	16.9	1426	9.32	2328	87.6	98.3	249	57.94	1351	9.61	7.38	8.88	1033	5.988	1513	1018.32	1021.2	2129	1015.1	3	
18	10.65	14.06	1327	7.91	2253	75.2	95.3	223	44.16	1435	6.151	5.888	7.54	907	4.185	1427	1020.23	1022.1	2212	1017.7	630	
19	10.87	14.19	1104	7.52	2347	75	90.7	2345	60.56	1128	6.555	5.974	7.02	1050	5.44	3	1021.84	1022.6	817	1021.0	1511	
20	9.75	15.01	1141	5.853	2359	85.2	98.7	2140	58.9	1300	7.26	6.278	7.58	1558	5.496	2359	1021.66	1022.3	2112	1021.0	1431	
21	9.25	13.37	1334	4.83	2357	86.9	99.1	33	64.78	1333	7.09	6.209	6.754	1914	5.188	2357	1020.46	1021.8	19	1019.0	2324	
22	6.81	14.36	1256	1.952	515	92	99.4	524	62.76	1256	5.495	5.633	7.53	1252	4.285	515	1016.58	1019.1	1	1014.3	2353	
23	7.33	14.52	1232	1.329	414	87.4	100	844	59.77	1233	5.205	5.559	7.69	1038	4.146	410	1011.62	1014.4	0	1009.6	1557	
24	9.95	12.91	1323	7.84	622	89.1	97.4	2149	73.1	1325	8.21	6.753	7.41	1301	5.968	9	1013.31	1018.6	2358	1009.9	335	
25	10.01	12.86	1311	8.52	218	96.8	99.6	2333	89.8	1352	9.53	7.32	8.49	1307	6.664	218	1022.99	1026.5	2353	1018.4	8	
26	11.67	15.24	1444	8.56	2359	93.8	99.8	431	75.9	1444	10.66	7.84	8.75	940	6.601	2357	1028.60	1031.4	2359	1026.3	0	
27	10.99	13.93	1433	7.19	39	91.3	99.8	908	77.5	1227	9.58	7.27	8.03	1928	6.083	39	1032.17	1033.6	956	1031.1	1623	
28	13.02	17.07	1131	10.04	543	85.4	98.2	2314	67.74	1133	10.56	7.75	8.83	1603	6.853	531	1034.15	1035.8	2224	1031.8	317	
29	12.17	14.35	1254	7.95	2344	95.5	99.3	2346	87	1303	11.46	8.24	9.15	1115	6.435	2357	1034.46	1036.2	906	1032.5	2355	
30	9.64	11.51	1402	7.88	11	99.1	100	812	96.1	1419	9.51	7.26	8.2	1142	6.416	11	1030.42	1032.6	0	1028.6	2351	
31	11.42	17.58	1423	6.859	2228	94.9	99.9	833	71.3	1443	10.56	7.84	9.7	1318	6.019	2228	1026.86	1028.7	2	1025.0	2357	
Total																						
Mean	10.35	15.24		6.34		87.1	97.69		63.28		7.88	6.72	8.11		5.58		1021.68	1024.11		1019.27		
Max	13.02	19.43		10.17		99.1	100.00		96.10		11.46	8.24	10.11		6.94		1034.46	1036.19		1032.46		
Min	6.81	10.34		1.03		73.9	85.50		40.35		-1.00	5.21	6.37		4.00		1006.00	1008.57		1003.90		

Wokingham Automatic Weather Station
 AWS samples taken every 0.5 seconds
 x and n refer to maximum and minimum respectively

Readings taken at Wokingham Climatological Station, Emmbrook, Berkshire
Lat 51.425 N, Long 0.853 W, NGR (SU) 798701
Altitude 45 m ASL.

Tmn = 00 to 24 GMT mean air temperature at 1.2 m, deg C
 RHmn = 00-24 GMT mean relative humidity at 1.2 m, percent
 TDmn = 00-24 GMT mean dew point at 1.2 m, deg C
 rmn = 00-24 GMT mean humidity mixing ratio, g/kg
 pmn = 00-24 GMT mean air pressure reduced to mean sea level, mbar
 Time = hours and minutes in GMT of extreme values

Temperature and humidity are from an aspirated Vaisala HMP45 unit
 Pressure is from a Setra CS100 sensor
 Data is logged on a Campbell Scientific CR10X measurement and control system

Explanation and definition of some of the terms used in the Wokingham Weather Reports.

Average: Generally refers to the 30 year climatological average, currently 1981 to 2010. This will be next updated in 2020. For some parameters, notably wind, the climatological average is not available, and if the word average is used in the context of wind, it refers to the average for the period for which data is held, namely 1988 to present.

For sunshine, there was a change, in July 1999, in the type of instrument used to detect sunshine amount, making the climatological average based on the old instrument of little use. In general, the new instrument produces higher values in the winter half year, and lower ones in the summer half, than the old type, due to a combination of faster reaction and higher sensitivity than the old type. The average used in this case is based on a theoretical equivalent 1981 to 2010 average, drawn from comparison with the Met Office published tables of departure from climatological average sunshine in the months since 2000 for their area 'Southern England'. Users of the Wokingham Monthly Weather reports should be aware of this, and regard anomalies for sunshine published therein as a guide only, until such time has elapsed since the introduction of the new instrument that a genuine average becomes available.

Mean: The mean of the data under discussion, often the monthly mean of daily data. The mean is obtained by summation of the individual values and dividing by the number of values. The term 'daily mean' in respect of temperature is defined as '(max + min) / 2'. A true daily 24 hour (00 to 24 GMT) mean temperature is available from the Automatic Weather Station (AWS), and is currently published on page 7 of the Wokingham Monthly Weather report, on the Wokingham Weather web site, page 1. <http://www.woksat.info/wwp1.html>

Anomaly: When a value is given for anomaly, this will have one of the following meanings:

- a): The departure of a mean from the current climatological average.
- b): The departure of a value on a particular day from the average for that day, (this need not be a climatological average).

When the word anomaly is used in respect of temperature, any values given are in °C. In respect of rainfall or sunshine, percent. In respect of wind, mph. In respect of pressure, millibars (hpa).

Categories: Reference may be made in the reports to 'categories'. Each category has a strict statistical range, as outlined below.

Temperature: The terms cold/mild are used in the winter half year, and cool/warm in the summer half. The term 'normal' is used when the individual mean (monthly, seasonal or annual) value is within 20 % of the median of all ranked values for that month/season/year.

Mild/warm: The value lies between 10 % and 30 % below the highest value in the ranked series.

Very mild/very warm: The value lies within 10 % of the highest value in the ranked series.

Cold/cool: The value lies between 10 % and 30 % above the lowest value in the ranked series.

Very cold/very cool: The value lies within 10 % of the lowest value in the ranked series.

Sunshine: The terms for sunshine are very sunny, sunny, normal, dull and very dull.

The definition of these terms follow the same rules as for temperature.

Rainfall: The terms for rainfall are very dry, dry, normal, wet and very wet.

The definition of the term 'normal' follows the same rule as for temperature and sunshine.

Wet: The value lies between 10 % and 30% of the highest value in the ranked series.

Very wet: The value lies within 10 % of the highest value in the ranked series.

Dry: The value lies between 10 % and 30 % above the lowest value in the ranked series.

Very dry: The value lies within 10 % of the lowest value in the ranked series.

Long-term: Mention may be made in the reports to the 'long-term'. The long-term record comprises a temperature/rainfall/sunshine data series compiled from records of various weather stations in the Wokingham area in the years prior to the establishment of the weather station at Emmbrook in 1976 together with data from this station.

In the case of monthly max, min and mean temperature and of rainfall total the series starts in 1882. For temperature extremes, the highest max and lowest min go back to 1904, and lowest max and highest min to 1913.

Rank: The word rank refers to the position of a value for a particular month/season/year in the ranked series, and may be expressed relative to either the highest or lowest value in the series. The central value in the ranked series is known as the **median**. This value may be different from the average of the whole series if the population is skewed. It can also be different from the climatological average which only refers to a 30 year period.

Month: Calendar month.

Season: Spring, March to May.

Summer, June to August

Autumn, September to November

Winter, December to February.

When discussing 'winter', if a single year is given this refers to the year in which the January/February fall.

Annual or Year: The calendar year, 1st January to 31st December.

The climatological day: runs from 0900 to 0900 GMT. The max temperature and rainfall read at 0900 hours are attributed to the previous day (thrown back), as is the duration of measurable rain. The min temperature and grass min read at 0900 hours are attributed to the day of reading. Pressure read at 0900 GMT, and the monthly mean pressure is the mean of the 0900 GMT readings. Sunshine data, wind data, rainfall rate data and 24 hour data from the AWS use the normal 00-24 GMT day.

Frost: An air frost day is recorded when the minimum temperature read at 0900 GMT on that day is -0.1°C or below. A ground frost day is recorded when the grass minimum temperature read at 0900 GMT on that day is -0.1°C or lower.

Duration of air frost is defined as the number of minutes that the AWS one minute average temperature is below 0.0°C , and the day runs from midnight to midnight.

Snow: A day with snow falling is triggered if snow falls at any time in the 24 hours from midnight on that day. A day with snow lying is entered if there is at least 50% snow cover at the 0900 GMT observation. Snow depth is the depth of undrifted snow. Snow that collects in the raingauge funnel is melted and the amount recorded as rainfall.

Hail: A day of hail is recorded if hailstones 5 mm or more in diameter are observed or recorded on the hail pad in a 24 hour period starting at midnight.

A day of small hail is recorded if hailstones less than 5 mm diameter are observed or recorded in a 24 hour period starting at midnight. The term small hail also includes various other types of ice meteor such as ice pellets, snow grains and some types of snow pellets.

Fog: A day with fog is recorded if the horizontal visibility at 0900 GMT is below 1000 m.

Thunder: A day of thunder is recorded if thunder is heard in the 24 hour period from midnight on that day. The appearance of lightning without thunder being heard does not qualify as a thunder day.

Trace of rainfall: A trace of rain, entered as 'tr' in the daily log, is recorded if rain is observed to fall but is of insufficient quantity to collect in the raingauge, or if the amount of rain in the gauge is less than 0.05 mm.

Dry spell: A dry spell is defined as a period of 5 or more consecutive dry days.

Dry day: A dry day is one with less than 0.2 mm of rainfall.

Rain day: A rain day is one with 0.2 mm or more of rainfall.

Wet day: A wet day is one having 1.0 mm or more of rainfall.

Appendix 2.

Explanation and decode for code figures used in the Wokingham 0900 and 1500 GMT observations

VV : Visibility.

Code figures 00 to 50 are in km and tenths e.g. 01 = 0.1 km = 100 m, 33 = 3.3 km, 50 = 5.0 km

Code figures 60 to 80. Subtract 50 to obtain visibility in km. e.g. 56 = 6 km, 65 = 15 km, 77 = 27 km.

Code figures 81 to 89. Subtract 50 and add 5 for every one above 80. e.g. 83 = 45 km, 86 = 60 km.

Code figure 89 = visibility above 70 km.

N : Total cloud amount in okta (eighths of sky covered). 9 = sky obscured (e.g. by fog or snow)

dd : Wind direction in tens of degrees from true north. Wind is measured at a height of 10 m, and the direction is the mean over a period of 10 minutes ending at the observation time.

ff : Wind speed in knots, measured at 10 m, and is the mean over a period of 10 minutes ending at observation time.

gg : Wind gust in knots at 10 m. The highest gust in the 60 minutes up to observation time.

TT : Air temperature at 1.2m, degrees C and tenths.

TdTd : Dew point temperature at 1.2m, degrees C and tenths.

RH : Relative humidity at 1.2m, %.

r : Humidity mixing ratio (amount of water vapour per kg of air), grams and tenths.

PPP : Air pressure reduced to MSL, millibars and tenths.

a : Characteristic of pressure tendency during the past 3 hours.

Code figures 0 to 3, pressure higher than 3 hours ago, 5 to 8, pressure lower than 3 hours ago

Code figure 0 = Increasing then decreasing, pressure the same as or higher than 3 hours ago

1 = Increasing then steady or increasing more slowly

2 = Increasing steadily or unsteadily

3 = Decreasing or steady then increasing, or increasing then increasing more rapidly

4 = Steady, pressure the same as 3 hours ago

5 = Decreasing then increasing, pressure lower than 3 hours ago

6 = Decreasing then steady or decreasing more slowly

7 = Decreasing steadily or unsteadily

8 = Steady or increasing then decreasing, or decreasing then decreasing more rapidly

ppp : 3 hour pressure tendency in tenths of a millibar

ww : Present weather code figures, 00 to 99.

Present weather decode:

00 = Cloud development not observed or not observable

01 = Clouds generally dissolving or becoming less developed

02 = State of sky on the whole unchanged

03 = Clouds generally increasing or becoming more developed

04 = Visibility reduced by smoke, e.g. veldt or forest fires, industrial smoke or volcanic ashes.

05 = Haze, visibility reduced by extremely small dry particles (RH less than appx. 95 %)

06 = Widespread dust in suspension, not raised by the wind near the station at the time of the observation

07 = Dust or sand raised by the wind at or near the station at the time of the observation, but no well-developed dust whirls or sand whirls, and no duststorm or sandstorm seen: In marine environments, blowing spray at the station.

08 = Well-developed dust or sand whirls seen at or near the station during the preceding hour or at the time of the observation, but no duststorm or sandstorm.

09 = Duststorm or sandstorm within sight at the time of the observation, or at the station during the preceding hour

- 10 = Mist
- 11 = Patches of shallow fog not deeper than 2 metres on land
- 12 = More or less continuous shallow fog not deeper than 2 metres on land
- 13 = Lightning visible, no thunder heard
- 14 = Precipitation within sight, not reaching the ground
- 15 = Precipitation within sight, reaching the ground more than 5 km from the station
- 16 = Precipitation within sight, reaching the ground, near to but not at the station
- 17 = Thunderstorm, but no precipitation at the time of the observation
- 18 = Squalls at or within sight of the station at the time of the observation or during the preceding hour
- 19 = Funnel cloud(s) at or within sight of the station at the time of the observation or during the preceding hour

- 20 = Drizzle (not freezing) at the station during the preceding hour but not at the time of the observation
- 21 = Rain (not freezing) at the station during the preceding hour but not at the time of the observation
- 22 = Snow at the station during the preceding hour but not at the time of the observation
- 23 = Rain and snow or ice pellets at the station during the preceding hour but not at the time of the observation
- 24 = Freezing drizzle or freezing rain at the station during the preceding hour but not at the time of the observation
- 25 = Shower(s) of rain at the station during the preceding hour but not at the time of the observation
- 26 = Shower(s) of snow or rain and snow at the station during the preceding hour but not at the time of the observation
- 27 = Shower(s) of hail or rain and hail at the station during the preceding hour but not at the time of the observation
- 28 = Fog or ice fog at the station during the preceding hour but not at the time of the observation
- 29 = Thunderstorm, with or without precipitation at the station during the preceding hour but not at the time of the observation

- 30 = Slight or moderate duststorm or sandstorm has decreased during the preceding hour
- 31 = Slight or moderate duststorm or sandstorm with no appreciable change during the past hour
- 32 = Slight or moderate duststorm or sandstorm has begun or increased during the past hour
- 33 = Severe duststorm or sandstorm has decreased during the preceding hour
- 34 = Severe duststorm or sandstorm with no appreciable change during the past hour
- 35 = Severe duststorm or sandstorm has begun or increased during the past hour
- 36 = Slight or moderate drifting snow generally below eye level
- 37 = Heavy drifting snow generally below eye level
- 38 = Slight or moderate blowing snow generally above eye level
- 39 = Heavy blowing snow generally above eye level

- 40 = Fog or ice fog at a distance at the time of the observation, but not at the station during the preceding hour, the fog extending to a level above that of the observer.
- 41 = Fog or ice fog in patches
- 42 = Fog or ice fog, sky visible has become thinner during the past hour
- 43 = Fog or ice fog, sky invisible has become thinner during the past hour
- 44 = Fog or ice fog, sky visible no appreciable change during the past hour
- 45 = Fog or ice fog, sky invisible no appreciable change during the past hour
- 46 = Fog or ice fog, sky visible has begun or become thicker during the past hour
- 47 = Fog or ice fog, sky invisible has begun or become thicker during the past hour
- 48 = Fog, depositing rime, sky visible
- 49 = Fog depositing rime, sky invisible

- 50 = Drizzle, not freezing, intermittent slight at time of observation
- 51 = Drizzle, not freezing, continuous slight at time of observation
- 52 = Drizzle, not freezing, intermittent moderate at time of observation
- 53 = Drizzle, not freezing, continuous moderate at time of observation
- 54 = Drizzle, not freezing, intermittent heavy at time of observation
- 55 = Drizzle, not freezing, continuous heavy at time of observation
- 56 = Drizzle, freezing, slight
- 57 = Drizzle, freezing, moderate or heavy (dense)
- 58 = Drizzle and rain, slight
- 59 = Drizzle and rain, moderate or heavy

60 = Rain, not freezing, intermittent slight at time of observation
61 = Rain, not freezing, continuous slight at time of observation
62 = Rain, not freezing, intermittent moderate at time of observation
63 = Rain, not freezing, continuous moderate at time of observation
64 = Rain, not freezing, intermittent heavy at time of observation
65 = Rain, not freezing, continuous heavy at time of observation
66 = Rain, freezing, slight
67 = Rain, freezing, moderate or heavy
68 = Rain or drizzle and snow, slight
69 = Rain or drizzle and snow, moderate or heavy

70 = Intermittent fall of snowflakes slight at time of observation
71 = Continuous fall of snowflakes slight at time of observation
72 = Intermittent fall of snowflakes moderate at time of observation
73 = Continuous fall of snowflakes moderate at time of observation
74 = Intermittent fall of snowflakes heavy at time of observation
75 = Continuous fall of snowflakes heavy at time of observation
76 = Diamond dust (with or without fog)
77 = Snow grains (with or without fog)
78 = Isolated star-like snow crystals (with or without fog)
79 = Ice pellets

80 = Rain shower(s), slight
81 = Rain shower(s), moderate or heavy
82 = Rain shower(s), violent
83 = Shower(s) of rain and snow mixed, slight
84 = Shower(s) of rain and snow mixed, moderate or heavy
85 = Snow shower(s), slight
86 = Snow shower(s), moderate or heavy
87 = Shower(s) of snow pellets or small hail, with or without rain or rain and snow mixed, slight
88 = Shower(s) of snow pellets or small hail, with or without rain or rain and snow mixed, moderate or heavy
89 = Shower(s) of hail, with or without rain or rain and snow mixed, not associated with thunder, slight
90 = Shower(s) of hail, with or without rain or rain and snow mixed, not associated with thunder, moderate or heavy

91 = Slight rain at time of observation, thunderstorm during the past hour but not at time of observation
92 = Moderate or heavy rain at time of observation, thunderstorm during the past hour but not at time of observation
93 = Slight snow, or rain and snow mixed, or hail at time of observation, thunderstorm during the past hour but not at time of observation
94 = Moderate or heavy snow, or rain and snow mixed, or hail at time of observation, thunderstorm during the past hour but not at time of observation
95 = Thunderstorm, slight or moderate, without hail but with rain and or snow at time of observation
96 = Thunderstorm, slight or moderate, with hail at time of observation
97 = Thunderstorm, heavy, without hail but with rain and or snow at time of observation
98 = Thunderstorm combined with duststorm or sandstorm at time of observation
99 = Thunderstorm, heavy, with hail at time of observation

Hail includes large hail, small hail and snow pellets.

W1, W2 : Past weather (for 0900 and 1500 GMT observations, the period covered is 3 hours)

Code figures:

- 0 = Cloud covering half or less of the sky throughout the period
- 1 = Cloud covering more than half the sky during only part of the period
- 2 = Cloud covering more than half the sky throughout the period
- 3 = Sandstorm, duststorm or blowing snow
- 4 = Fog or ice fog or thick haze (visibility less than 1000 m)
- 5 = Drizzle
- 6 = Rain
- 7 = Snow or rain and snow mixed
- 8 = Shower(s)
- 9 = Thunderstorm(s) with or without precipitation

Nh : Amount of low cloud, or medium cloud if no low cloud present, okta

Cl : Type of low cloud

- 0 = No low cloud
- 1 = Cumulus with little vertical extent and seemingly flattened, or ragged Cumulus other than bad weather, or both
- 2 = Cumulus of moderate or strong vertical extent, either accompanied or not by other Cumulus or Stratocumulus all having their bases at the same level
- 3 = Cumulonimbus whose summits, at least partially, lack sharp outline, but are neither clearly fibrous (cirriform), nor in the form of an anvil; Cumulus, Stratocumulus or Stratus may also be present
- 4 = Stratocumulus formed by the spreading out of Cumulus; Cumulus may also be present
- 6 = Stratus in a more or less continuous sheet or layer, or ragged shreds, or both, but no Stratus fractus of bad weather
- 7 = Stratus fractus of bad weather or Cumulus fractus of bad weather or both (pannus), usually below Altostratus or Nimbostratus
- 8 = Cumulus and Stratocumulus other than that formed by the spreading out of Cumulus, the bases of the Cumulus and Stratocumulus are not at the same level.
- 9 = Cumulonimbus, the upper part of which is clearly fibrous (cirriform), often in the form of an anvil, either accompanied or not by any other type(s) of low cloud
- / = Types of low cloud invisible due to darkness, fog, blowing dust or sand or other similar phenomena.

'Bad weather' denotes the conditions which generally exist during precipitation and a short time before and after.

Cm : Type of medium cloud.

- 0 = No medium cloud.
- 1 = Altostratus, the greater part of which is semi-transparent; through this part the sun or moon may be weakly visible, as through ground glass
- 2 = Altostratus, the greater part of which is sufficiently dense to hide the sun or moon, or Nimbostratus
- 3 = Altocumulus, the greater part of which is semi-transparent; the various elements of the cloud change only slowly and are all at a single level
- 4 = Altocumulus in patches (often in the form of almonds or fishes), the greater part of which is semi-transparent ; the clouds occur at one or more levels and the elements are continually changing in appearance
- 5 = Altocumulus in bands semi-transparent, of Altocumulus in one or more fairly continuous layers (semi-transparent or opaque), progressively invading the sky; these Altocumulus clouds generally thicken as a whole
- 6 = Altocumulus resulting from the spreading out of Cumulus (or Cumulonimbus)
- 7 = Altocumulus in two or more layers, usually opaque in places, and not progressively invading the sky; or opaque layer of Altocumulus not progressively invading the sky; or Altocumulus together with Altostratus or Nimbostratus
- 8 = Altocumulus with sproutings in the form of small towers or battlements, or Altocumulus having the appearance of cumuliform tufts
- 9 = Altocumulus of a chaotic sky, generally at several levels
- / = Types of medium cloud invisible owing to darkness, fog, blowing dust or sand or other similar phenomena, or more often because of the presence of a continuous layer of lower clouds.

Ch : Type of high cloud

0 = No high cloud

1 = Cirrus in the form of filaments, strands or hooks, not progressively invading the sky.

2 = Dense cirrus, in patches or entangled sheaves, which usually do not increase and sometimes seem to be the remains of the upper part of a Cumulonimbus; or Cirrus with sproutings in the form of small turrets or battlements, or Cirrus having the appearance of cumuliform tufts

3 = Dense Cirrus, often in the form of an anvil, being the remains of the upper part of Cumulonimbus, or where the rest of the Cumulonimbus is below the horizon

4 = Cirrus in the form of hooks or filaments, or both, progressively invading the sky; they generally become denser as a whole

5 = Cirrus (often in bands converging towards one or two opposite points on the horizon) and Cirrostratus, or Cirrostratus alone; in either case they are progressively invading the sky, and generally growing denser as a whole, but the continuous veil does not reach 45 degrees above the horizon.

6 = Cirrus (often in bands converging towards one or two opposite points on the horizon) and Cirrostratus, or Cirrostratus alone; in either case they are progressively invading the sky, and generally growing denser as a whole; the continuous veil extends more than 45 degrees above the horizon, without the sky being totally covered

7 = Veil of Cirrostratus covering the celestial dome.

8 = Cirrostratus not progressively invading the sky and not completely covering the celestial dome

9 = Cirrocumulus alone, or accompanied by Cirrus or Cirrostratus, or both, but Cirrocumulus is predominant.

/ = Types of high cloud invisible owing to darkness, fog, blowing dust or sand or other similar phenomena, or more often because of the presence of a continuous layer of lower clouds.

8 Groups

N = Amount of cloud reported by C, okta.

C = Type of cloud

0 = Cirrus (Ci)

1 = Cirrocumulus (Cc)

2 = Cirrostratus (Cs)

3 = Altocumulus (Ac)

4 = Altostratus (As)

5 = Nimbostratus (Ns)

6 = Stratocumulus (Sc)

7 = Stratus (St)

8 = Cumulus (Cu)

9 = Cumulonimbus (Cb)

/ = Cloud type not visible owing to darkness, fog, duststorm, or other analogous phenomena.

hshs = Height of cloud above station level reported by type C

00 to 50 = Height in hundreds of feet

51 to 55 Not used

56 to 80 = Subtract 50 to obtain cloud height in thousands of feet

81 to 88 = Height of cloud between 35000 and 70000 ft in 5000 ft steps.